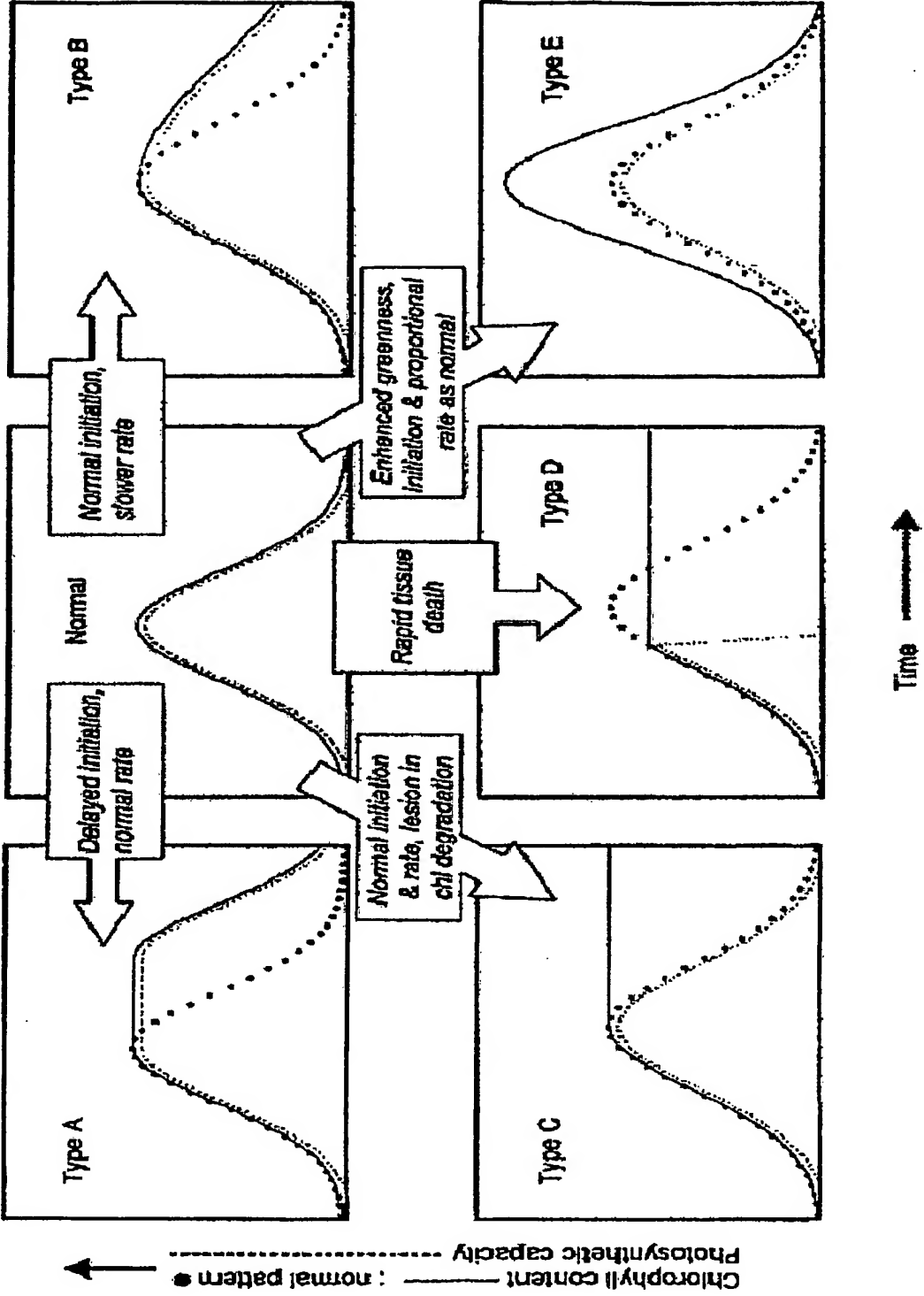


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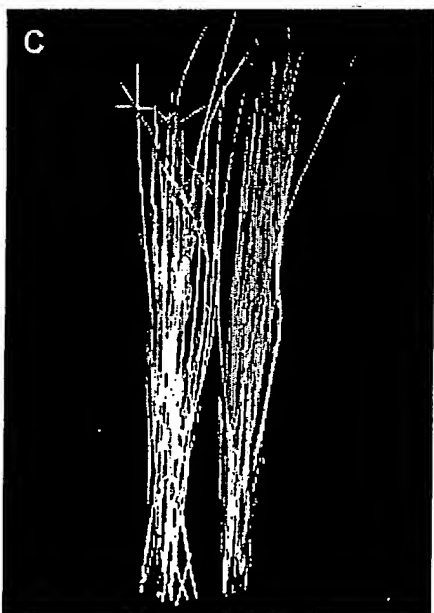
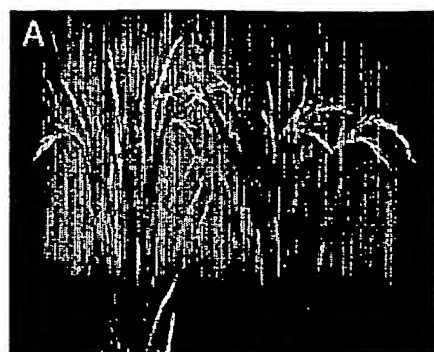
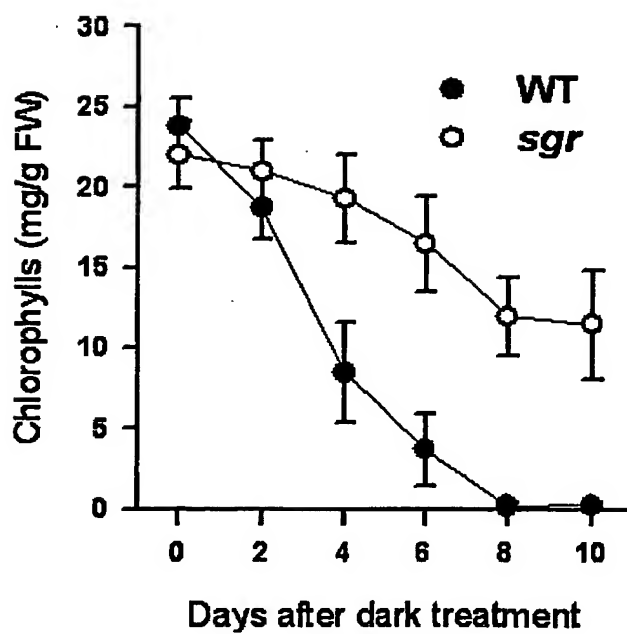
FIG. 1



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FIG. 2

**D**

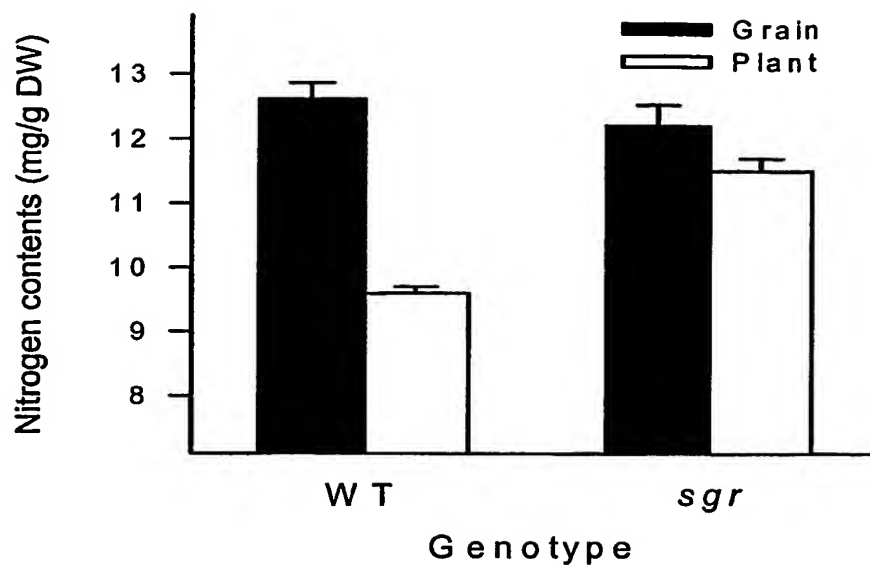
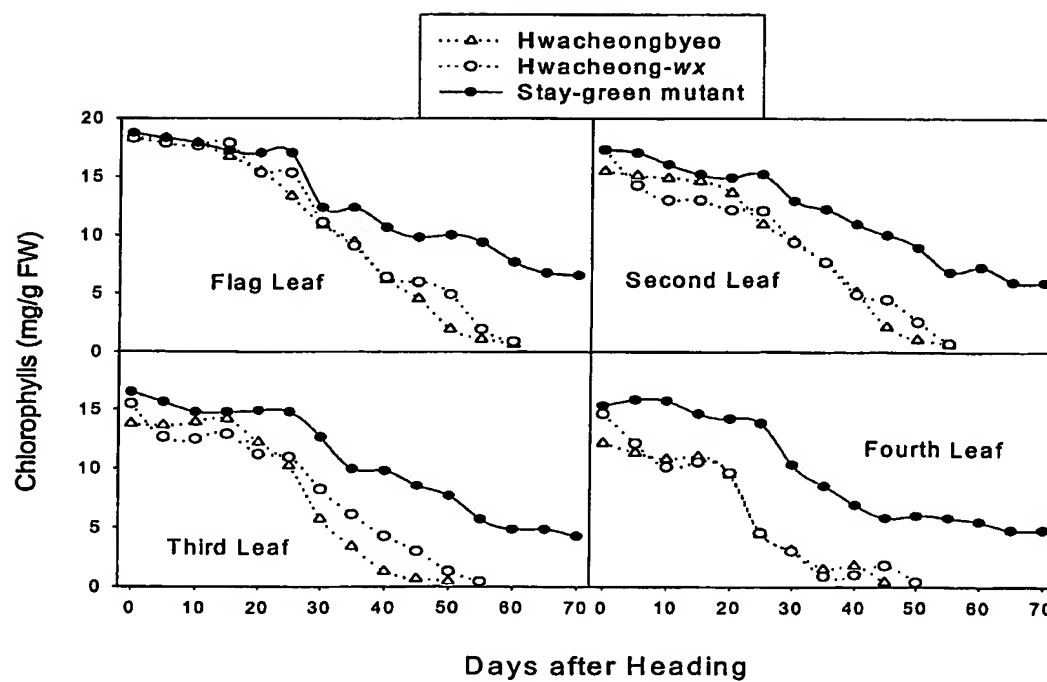
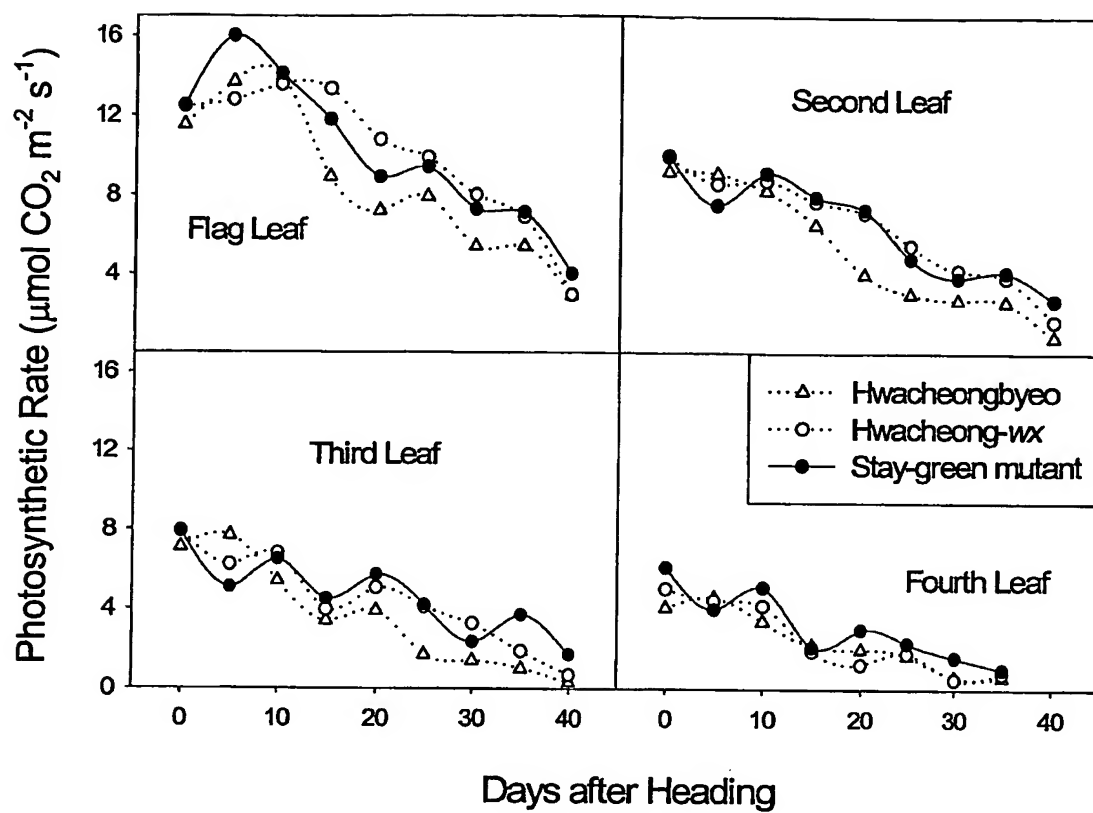
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FIG. 3

FIG. 4

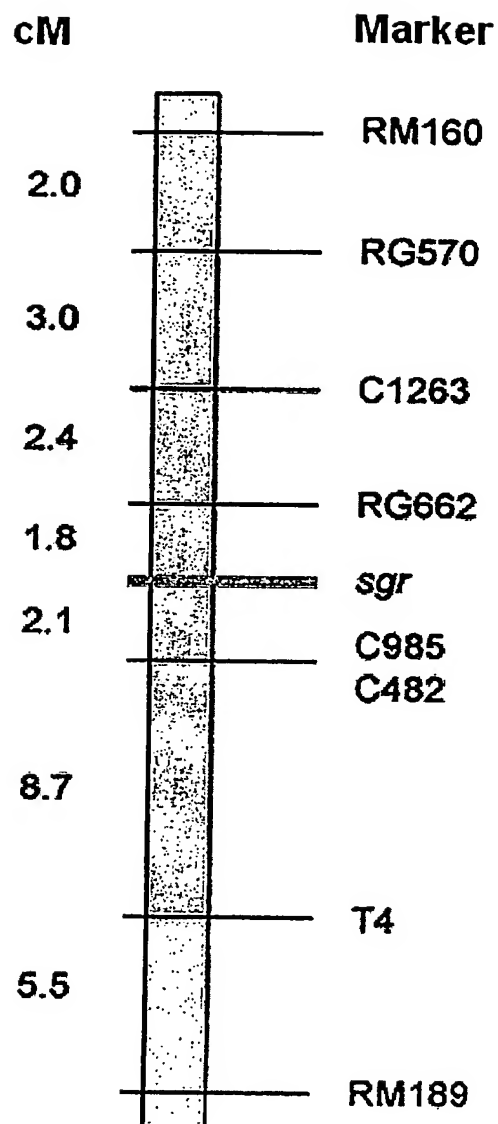


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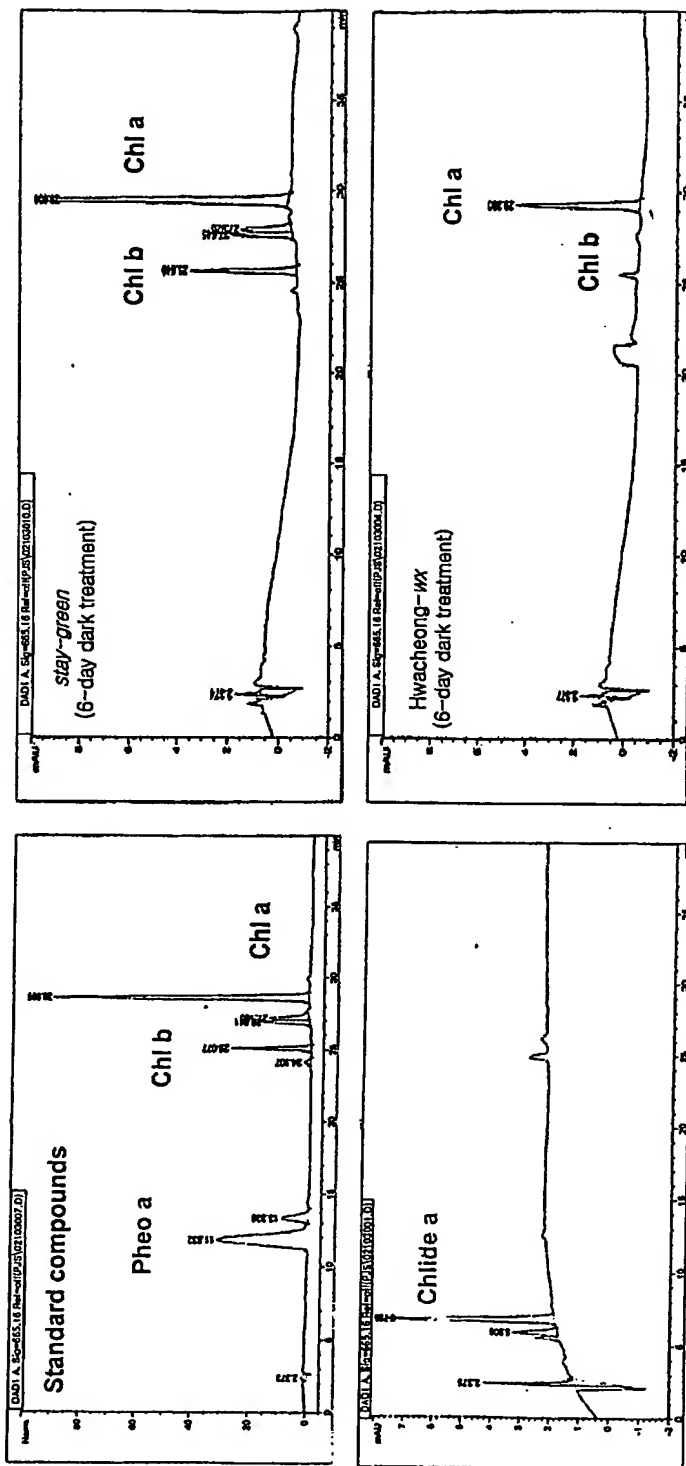
FIG. 5



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FIG. 6

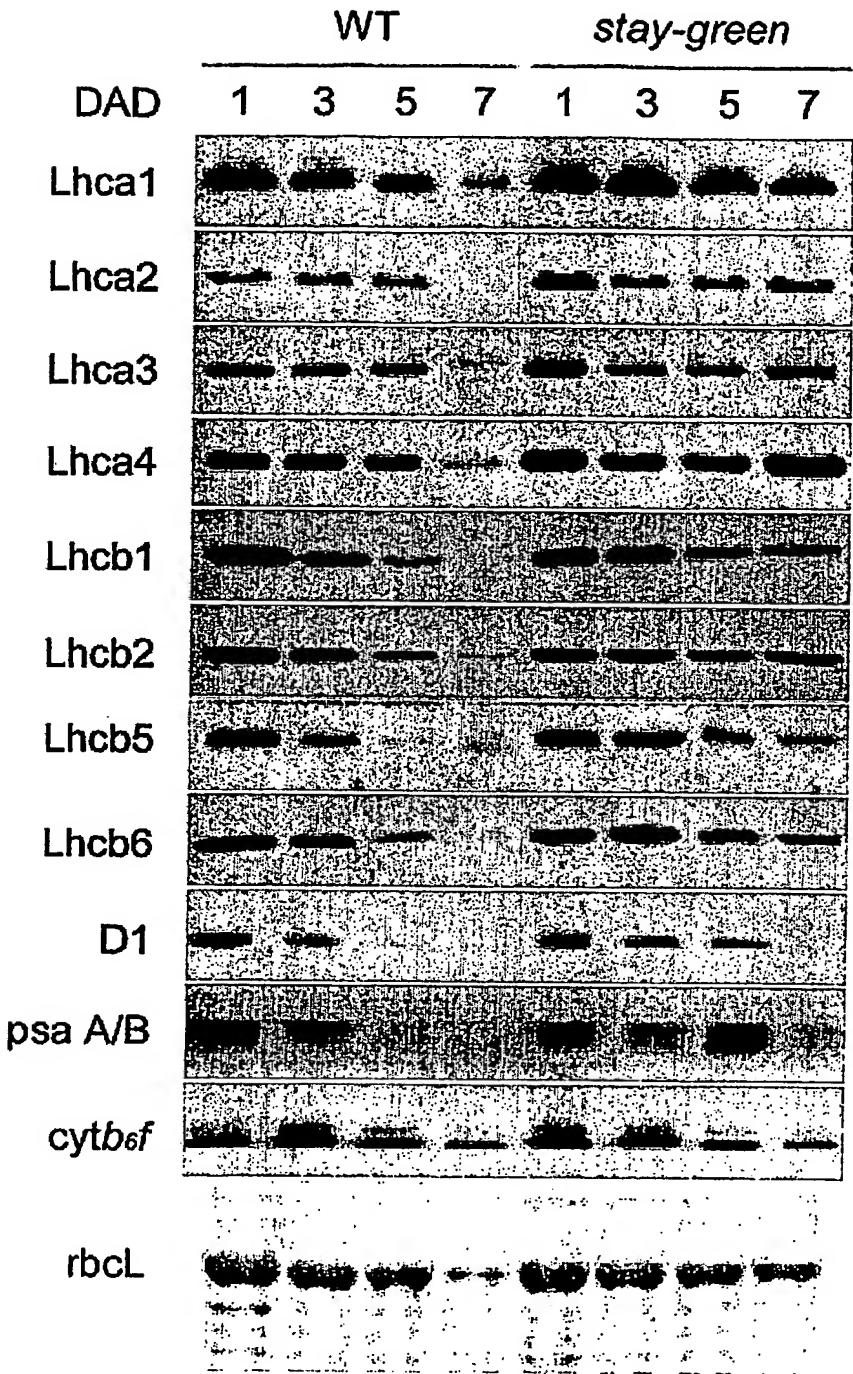


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FIG. 7



HPLC Running Time (min)

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FIG. 8



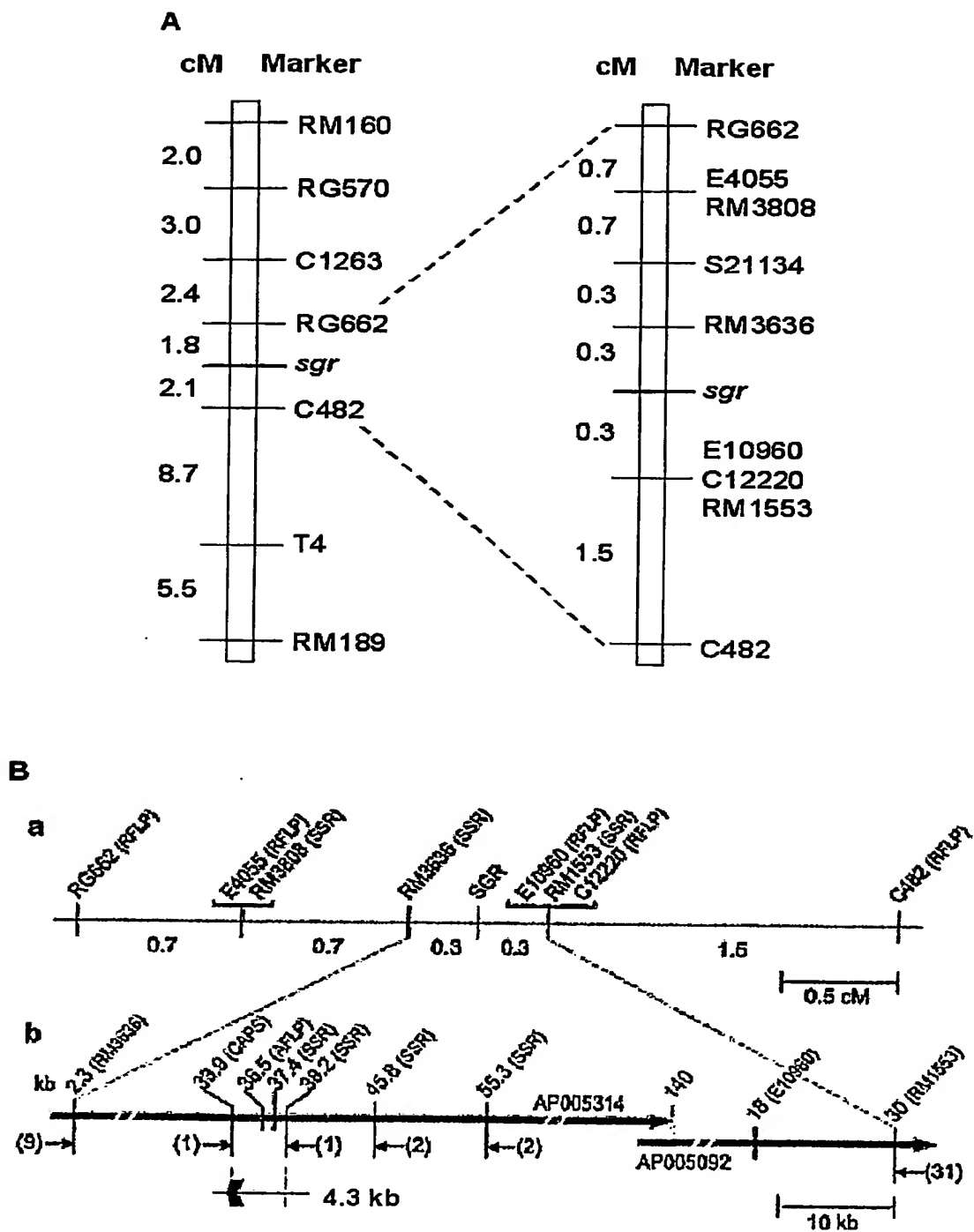
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FIG. 9



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FIG. 10



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FIG. 11

AP005314	289	ctggcgggtgtcgcacaccatcaaccggg	cgagctgcaggggtggtacaacaagctgcag	348
<i>sgr</i>	171	ctggcgggtgtcgcacaccatcaaccggg	cgagctgcaggggtggtacaacaagctgcag	230
AP005314	289	ctggcgggtgtcgcacaccatcaaccggg	cgagctgcaggggtggtacaacaagctgcag	348
<i>sgr F₂</i> (844)	170	ctggcgggtgtcgcacaccatcaaccggg	cgagctgcaggggtggtacaacaagctgcag	229
AP005314	289	ctggcgggtgtcgcacaccatcaaccggg	cgagctgcaggggtggtacaacaagctgcag	348
Hwacheong-mx	585	ctggcgggtgtcgcacaccatcaaccggg	cgagctgcaggggtggtacaacaagctgcag	526
(japonica)				
AP005314	289	ctggcgggtgtcgcacaccatcaaccggg	cgagctgcaggggtggtacaacaagctgcag	348
Milyang23	180	ctggcgggtgtcgcacaccatcaaccggg	cgagctgcaggggtggtacaacaagctgcag	239
(indica)				

FIG. 12

1 MAAATS TMSLLPPI TQQQRWHAADSLVVLASRCHNSRRRRRCRYVVPRAR 50
 chloroplast-targeting
 signal peptide

51 LFGPAIFEASKLKVLFLGVDEEKHQHPGKLPRTYTLTHSDVTARLTLAVS 100
 (gtg)
 M
 (atg)
 (missense mutation)

101 HTINRAQLQGWNKLQRDEVVAEWKKVQGHMSLHVHCHISGGHVLLDLIA 150

151 GLRYIIFRKELPVVLKAFVHGDGNLFSRHPELEEATVWVYFHSNLPFRNR 200

201 VECWGPLRDAGAPFEEDDAVAAAAEEAAAEQMPAAGEWFRRCPGQCDC 250

251 EPEXSLIEWPHOHDAADGQFOQ 274

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FIG. 13

Darkness (days)

0 2 4 6 8

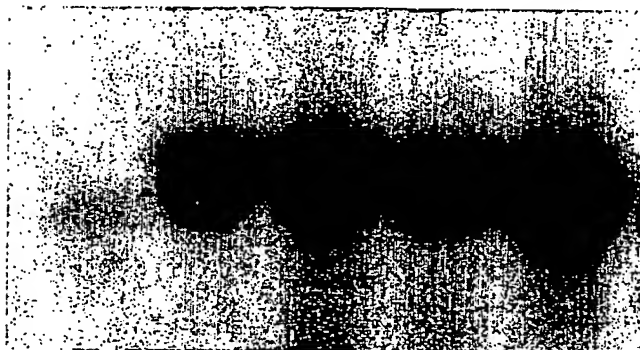


FIG. 14

2-d dark treatment

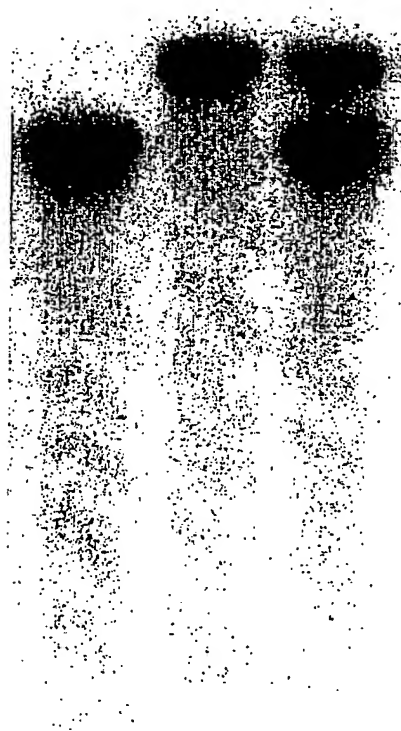
control	H ₂ O	6-BA (100μM)	ethephon (150μM)
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FIG. 15

<i>sgr</i>	M23	F ₁
J	I	H



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FIG. 16

Rice	MAAATSTMSLLP	PIEQOQ--RWHAADSLV-VLASRCHNSRRRRRCRYVVPRLFG
Maize1	MAAAASTMSLLP	ISQPRKQOQOQAGAVV-VFQRRPWDARRRR---YVVPRLFG
Sorghum	MAAATAAAASTMSLLP	ISQLR-QQOHGAGAVV-VFRRRRARDARRRR---YVVPRLFG
Maize2	MAAATAAAASTMSLLP	ISQLR-QQOHGAG---AMRRRPWVARRRR---YVVPRLFG
Barley	MAIAAAAGASTMSLLP	ISHLKQLQLORRRAR-----PGRVLVLGRRR--RHVVPRLFG
Wheat1	MATASTMSLLP	ISHLKQMQOQRRTRTAGALPGKVLVLGRRR--RHVVPRLFG
Wheat2	MATASTMSLLP	ISHLKQMQOQRRTRTAGALPGKVLVLGRRR--RHVVPRLFG

Rice	PAIFEASKLKVLFVGVDDEE--KHQHPG-----KLPRTYTLTHSDVTARLTLAVS
Maize1	PAIFEASKLKVLFVGVDGSS--KELHAHHPAP----APLLPRTYTLTHSDVTASLTLAVS
Sorghum	PAIFEASKLKVLFVGVDDEESNNKEGHPTTPSPPLPLPRTYTLTHSDVTASLTLAVS
Maize2	PAIFEASKLKVLFVGVDDEAGSKQHGP-----LPRTYTLTHSDVTARLTLAVS
Barley	PAIFEASKLKVLFVGVDDEE--KHGP-----KLPRTYTLTHSDVTARLTLAVS
Wheat1	PAIFEASKLKVLFVGVDDEE--KHGP-----KLPRTYTLTHSDVTARLTLAVS
Wheat2	PAIFEASKLKVLFVGVDDEE--KHGP-----KLPRTYTLTHSDVTARLTLAVS

Rice	HTINRAQLQGWNKLQORDEVVAEWKKVQGHMSLHVHCHISGGHVLDDLIAGLRYYIFRKE
Maize1	HTINRAQLQGWNRLQORDEVVAEWKKVGRMSLHVHCHISGGHVLDDLIAGLRYYIFRKE
Sorghum	HTINRAQLQGWNRLQORDEVVAEWKKVGRMSLHV-----
Maize2	HTINRAQLQGWNRLQORDEVVAEWKKVGRMSLHVHCHISGGHFLDDLIAGLRYYIFRKE
Barley	HTIHAAQLQGWNRLQORDEVVAEWKKVQGHMSLHVHCHISGGHFLDDLIAPLRYYIFRKE
Wheat1	HTIHAAQLQGWNRLQORDEVVAEWKKVQGHMSLHVHCHISGGHFLDDLIAPLRYYIFRKE
Wheat2	HTIHAAQLQGWNRLQORDEVVAEWKKVQGHMSLHVHCHISGGHFLDDLIAPLRYYIFRKE

Rice	LPVVLKAFVHGDGCLFSRHPELEEATVWVYFHSNLPFRNRVECWGPLRDAGAP-PEEDDA
Maize1	LPVVLKAFVHGDGCLFSRHPELEEATVWVYFHSNLARFNRVECWGPLRDAAAPAPAEEDDS
Sorghum	----LKAFVHGDGCLFSRHPELEDAVWVYFHSNLTRFNRVECWGPLRDAAAP-PAEDDS
Maize2	LPVVLKAFVHGDGCLFSRHPELEEATVWVYFHSNLARFNRVECWGPLRDAAAP--AEDDS
Barley	LSVVLKAFVHGDGSLFSQHPELEEATVWVYFHSNNPNFNRVECWGPLSDAAAPVDDEAAV
Wheat1	LPVVLKAFVHGDGSLFSQHPELEEATVWVYFHSNNPNFNRVECWGPLREAAAPVDNKTPF
Wheat2	LPVVLKAFVHGDGSLFSQHPELEEATVWVYFHSNNPNFNRVECWGPLAMPRA-LDDETPR

Rice	VAAAAABE-AAABQMPAAGEWPRRCPG-----QCDCCFPFYSPLIPWPHQHDMAAADG-
Maize1	TAPAAAS-I-AMEGOMP-VGEWPHRCPO-----QCDCCFPFHSPLIPWPNEDMAAAAG-
Sorghum	TAPAAAS--NKDQMPVPVGEWPRRCPO-----QCDCCFPFHSPLIPWPNEDMAAAAG-
Maize2	TAPPDASNSKEAGQMMAMCEWPHRCPO-----QCDCCFPFHSPLIPWPNEDMAAADAS
Barley	DSPAADAAMAATAVNTADEQATRAGQWPRRCPGQCDCCFPPECLIPWPHHEHMAADAG-
Wheat1	RPCPQSDAGDKKAMDRAAPR-GSRGME-----CESRPNPPIGP-RIQMPFPR--
Wheat2	DSHRRRTVPLHDDSRRAGSAPGAPALD-----GVE-QNAIFG--ADFTANR--

Rice	-----QFQQ	274
Maize1	-----QVRQC	281
Sorghum	ASSAAGQAQQQ	266
Maize2	-----GSAQQQ	274
Barley	-----QAPPQ	281
Wheat1	-----QAPQ	266
Wheat2	-----QSPQ	264

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FIG. 17

Soybean1	MGLTTVP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Soybean2	MGLTTVP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
M. truncatula	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Grape	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Orange	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Poplar1	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Poplar2	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Lettuce	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Potato	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Iceplant	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Arabidopsis1	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Arabidopsis2	MGLTTAPP--VLPSKLNKPSLS----PHHNSLFPYCGRP---VGKKNKAMVPVARLFGPAIFEASKLVFLGVDENKHF
Soybean1	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Soybean2	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
M. truncatula	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Grape	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Orange	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Poplar1	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Poplar2	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Lettuce	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Potato	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Iceplant	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Arabidopsis1	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Arabidopsis2	ENLPRYTLTHSDITAKLTLLAISQTIINNSQLQGWYNRRLRDEVVAQWKKVKGMSLHVHCHISGGHFLDLCLARLYYIF
Soybean1	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Soybean2	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
M. truncatula	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Grape	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Orange	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Poplar1	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Poplar2	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Lettuce	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Potato	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Iceplant	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Arabidopsis1	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Arabidopsis2	CKELPVVLFKAVHGDENLNNYPELQDALVWVYFHSNIPEFNKVECWGPKLEASPTGGVQEE-----EQETLLS
Soybean1	--GLATF--QPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 261
Soybean2	KEGLATF--QPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 271
M. truncatula	HQNLATF--QPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 263
Grape	SSKWERF--EPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 274
Orange	ISNWERF--EPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 271
Poplar1	ATDWERF--EPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 260
Poplar2	SSNWERF--EPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 270
Lettuce	SNNWERF--EPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 280
Potato	NNKWERF--EPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 272
Iceplant	DNELWERF--EPCQ--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 286
Arabidopsis1	-KTETPEARCA--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 268
Arabidopsis2	KKSETLEPFLCP--ECCCFPPPLTSLPIQWSKQVPSRHY---EPCDGIETQSL 271

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FIG. 18

Rice	MAAATSTMSL-----LPPITQQRWHAADSLVVLASRCHN
Orange	MASLVAALG-----LPSKLGASPYEQQNALFVSR-----
Pine	MAVARISAGKTQHCYSFSPSDVRISSAPQNSQSQFKRKSKIKLSSFLAS
Rice	-----SRRRRRCRYVVR-----ARLFGPAIFEASKLKVL
Orange	-----RSKKKNQSFAP-----VARLFGPAIFEASKLKVL
Pine	ESSWNGLVAHQLQCNNRHRINSFPRSTSRVVARLFGPAIFQASKLKVL
Rice	LGVDEEKHQHPGKLPRYTLTHSDVTARLTAVSHTINRAQLQGWYNKLO
Orange	LGVDEEK--HPGKLPRYTLTHSDITSKLTLAISQTTINNSQLQGWYNRLQ
Pine	LGTHEEK--HPAHLPRYTLTHSDITAKLTLAIFSQTINKD--QGWYNRLQ
Rice	RDEVVAEWKKVQGHMSLVHCHISGGHVLLDLIAGLRYYIFRKELPVVLK
Orange	RDEVVAEWKKVKCKMSLVHCHISGGHFLLDICARLRFYIFRKELPVVLK
Pine	RDEVLAQWKKSQCKMSLVHCHISGGHWLLDAIARLRFYIFRKELPVVLK
Rice	AFVHGDGNLFSSRHPELEEATVWVYFHSNLPFRNVECWGPLRDACAPPEE
Orange	AFVHGDGNLLNNHPELQEALVWVYFHSNLPFENKVECWGPLKEAVAGSSE
Pine	AFRHGDRALLEKHPELETALVWVYFHSNVKEFKRVECWGSLAEACKGAPS
Rice	DDAVAAAAAEAAAAEQMPAAGEWPRRCPGQCDCCFPPYSLIPW----PHO
Orange	----AGGTRHEIROETSI SNWELPEPCOETCNCCFPPMSLIPWSEKLPLO
Pine	-----NLNKELDELDCGKLEMPSEHCAEPCSCCFPPFSVLLR----PED
Rice	HDVAAADGQ---PQC 274
Orange	TENRGTOGQESLQQQTR 271
Pine	VEQFS 290

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FIG. 19

Arabidopsis1	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Arabidopsis2	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Lettuce	MASL	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Potato	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Iceplant	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Soybean1	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Soybean2	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
M. truncatula	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Grape	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Orange	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Poplar1	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Poplar2	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Pine	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Maise1	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Sorghum	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Maise2	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Rice	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Wheat1	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Wheat2	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Barley	SLBAD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA			
Arabidopsis1	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Arabidopsis2	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Lettuce	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Potato	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Iceplant	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Soybean1	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Soybean2	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
M. truncatula	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Grape	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Orange	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Poplar1	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Poplar2	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Pine	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Maise1	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Sorghum	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Maise2	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Rice	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Wheat1	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Wheat2	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Barley	RLFGPAIFESKLVFLGVDEK	KHPG	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Arabidopsis1	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Arabidopsis2	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Lettuce	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Potato	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Iceplant	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Soybean1	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Soybean2	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
M. truncatula	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Grape	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Orange	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Poplar1	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Poplar2	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Pine	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Maise1	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Sorghum	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Maise2	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Rice	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Wheat1	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Wheat2	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Barley	VKGMNSLVHCHISGGHFLDL	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Arabidopsis1	DGH	KTETLPRAR	CA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA	
Arabidopsis2	HQHDGRTHKKSETLPRLP	CP	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Lettuce	TTTTSSSSSLSESTIAEAGEGSSNN	KPLC	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Potato	SSSSSSGOGVKSTSTFTSNNSNN	KPLC	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Iceplant	KNKNKNKIDPKLSFKEDDSDPNLE	ETCX	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Soybean1	GVQEE	GLAE	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Soybean2	QAKES	EQETLLSKEGLAE	QPCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA	
M. truncatula	GTQRD	HQNTLLE	BPCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA	
Grape	PAAGGGGGRVBAHQDMRQVPSKRE	BPCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Orange	EAGG	TRHEIRQETSISN	BPCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA	
Poplar1	AASGG	APENKE	QATDNLE	BPCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA
Poplar2	SETGG	SNETEELANQSSN	BPCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA	
Pine	APSN	LNKELDELGGKLEP	SHCA	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA	
Maise1	EDDSTAPAAAS	AMEGQMP	VGE	PHRCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA
Sorghum	EDDSTAPAAAS	NKDGQMP	VGE	PHRCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA
Maise2	EDDSTAPDAS	NSKEAGQMANACE	PHRCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA	
Rice	EDDAVAAAAAS	AAAEQMPAAGE	PHRCQ	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA	
Wheat1	KTPTRPCPGDAGDGKAMDRAAP	GSRGME	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Wheat2	ETPRDSHRRRTVPLHDDSRAGSAPGA	BALD	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		
Barley	EAADVSPAADAAMAAVNTAADSOATRAGONPRCPOG	CCFP	LLP	KLP	PAYSDK	RSN	SSSS	SLF	PNRR	SKS	QSL	LVF	VA		

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FIG. 20

Potato	MGTLTASLVVPSKLN---NEKQ----SSIFVHKTRRKSKKNQST-VPVAR
Tomato	MGTLTTSLVVPSKLN---NEQQ----SSIFVHKTRRKCKKNQST-VPVAR
Rapel	MCSLATNLLLPSTMKPAFTEKON--TNSLFLTNKRSLMQNRSTVPVPVAR
Rapel2	MCSLSANMLLPKLPAYSDEKRGNSINSLLVSNTRSK-RKNQSW-VPVAR
Potato	LFGPAIFEASKLKVLFLGVDEEKHPGKLPRTYTLTHSDITSKLTLAISQT
Tomato	LFGPAIFEASKLKVLFLGVDEEKHPGKLPRTYTLTHSDITSKLTLAISQT
Rapel	LLEPAIFEASKLKVSFLGVDEKKHPSKLPRTYTLTHSDITAKLTLAISQS
Rapel2	LFGPAIFESKLVFLGVDDKKHPTLPRTYTLTHSDITAKLTLAISH (partial)
Potato	INNSQLQGWNRLQORDEVVAEWKKVKGKMSLVHCHISGGHFMLDLFARL
Tomato	INNSQLQGWNRLQORDEVVAEWKKVKGKMSLVHCHISGGHFMLDLFARL
Rapel	INNSQLQGWANRLFRDEVVAEWKKVKGKMSLVHCHISGGHFLLDLIAKL
Lotus2	(partial)DLCAKL
Potato	RNYIFCKELPVVLKAFVHGDNLLKNPELQEALVWVYFHSNIOEFNKVE
Tomato	RNYIFCKELPVVLKAFVHGDNLLRNYPELQEALVWVYFHSNIOEFNKVE
Rapel	RYIFCKELPVVLKAFVHGDCNLLNSYPELQESVWVY---SIQ-----
Lotus1	(partial)YPELQDALVWVYFHSKIPEFNKVQ
Lotus2	RYIFCKELPVVLKAFIHGDNLFNNYPELEESLVWVYFHSNISEFNKVE
Sugarbeet	(partial)PELQEASVWVYFHSIPEFNKVE
Potato	CWGPLKDATSPS-SSSSGVGGVKST----SFTSNSNNKWELPKPCEEACA
Tomato	CWGPLRDATSPS-SSSGGVGGVKST----SFTSH (partial)
Rapel	-----TSPS-TIRLNVGGRFGR----PRSTN (partial)
Lotus1	CWGPLKEAAAPSG-----GSPEKEGEGVKMPDPCPEECE
Lotus2	CWGPLKDACATS-----IG-----SYSYDKG--MPQTQPCQONCE
Sugarbeet	CWGPLTDAVDPPSKNKKRMMMINDEQDKKEEEEASSSKWENLVCTKPCR
Potato	CCFPP---MSVMPWPSSNLDGIGEENGTIQQGLQEQQS
Lotus1	CCFPPPPALDPIPWSEEVPSPHYEAFDGVGTRPNL
Lotus2	CCFTP---MSSSDWIG-----TOOKL
Sugarbeet	CCFPP---TSITPWT-----PSLSQEQQQEQQLPGDVSIPPPGTR

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FIG. 21

Rice	MAAATSTMSLLPPITQQRWHAADSLVVLASRCHNSRRRRRCRYVVPRAR
Rice Zoysia	LFGPAIFEASKLKVLFLGVDEEKHQHPGKLPRTYTLTHSDVTARLTAVS (partial) TYTLTHSDVTAKLTAVS
Rice Zoysia sugarcane	HTINRAQLQGWNKLQORDEVVAEWKKVOGHMSLVHCHISGGHVLLDLIA HTIHAAQLQGWNRLQORDEVVAEWRKVRGNMSLVHCHISGGHFLRDLIA (partial) TRLDLIA
Rice Zoysia sugarcane	GLRYYIFRKELPVVLKAFVHGDGNLFSRHPELEEATVWVYFHSNLPRFNR PLRYYIFRKELPVVLKAFVHGDGSLFSSHPHELEEATVWVYFHSNLPRFNR GLRYYIFRKELPVVLKAFVHGDGDLFSRHPELEDATVWVYFHSNLTRFNR
Rice Zoysia sugarcane	VECWGPLRDAGAPPEEDDAVAAAAEAAAAEQMPAAGEWP RRCPGQCDC VECWGPLCDAAAPVEEE-----GOONDDREP-AGEWP RRCPQQCCECC VECWGPLRDAAAPPAEEDS-TAPAASNSKEGOMPPVGEWPYRCPOQCDC
Rice Zoysia sugarcane	FPPYSLIPWPHQHDVA--AAD----GQPQQ FPPHSLIPWPNEHDMA--PTDAPAAGQITQQ FPPHSLIPWPNEHDMAAAADATAAGQAQQQ

FIG. 22

Pine	MAVARISAGKTQHCYSFSPSDVRRISSAPQNSQSQFKRKSKIKLSSRFLAS
Pine	ESSWNGLVAHQLQCNNRHRTNSSFP RSTSRVVARLFGPAIFQASKLKVL
Pine Spruce	LGTHEEKHPAHLPRITYTLTHSDITAKLTAFSQTINKD--QGWNRLQRD (partial) INKDQLQGWNRLQRD
Pine Spruce	EVLIAQWKKSQ GKMSLVHCHISGGHWLLDAIARLRFYIFRKELPVVLEAF EVLIAQWKKSQ GKMSLVHCHISGGHWLLDAIARLRFYIFRKELPVVLEAF
Pine Spruce	RHGDRALEKHPETALVWVYFHSNVREFKRV ECVGSLAEACKCAPSNL RHGDRALEKHPETALVWVYFHSNVREFKRV ECVGSLAEACKCAPSNL
Pine Spruce	NKELD-ELDGGKLEMPSHCAEPCS CCFPPFSVLLRPEDVEQFS EKELDEEFNGE KLEMPSHCSEPCNCCFPPFSVLLRPEDAEQFI

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FIG. 23

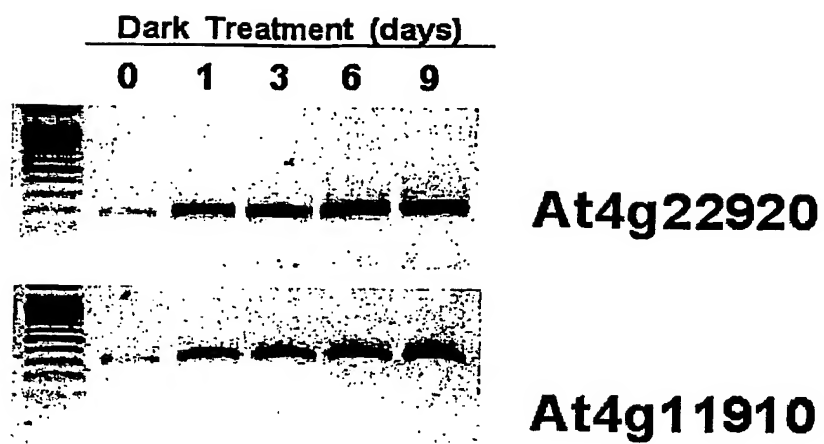
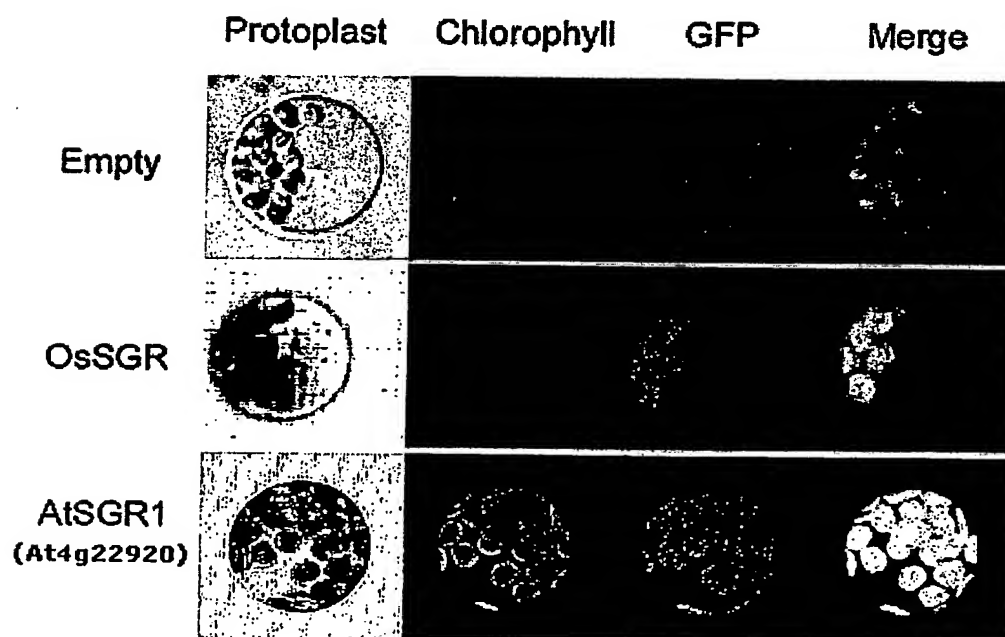


FIG. 24



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FIG. 25

Control
(Col-0)



0 DAD

T1-1



Control
(Col-0)



3 DAD

T1-1



Control
(Col-0)



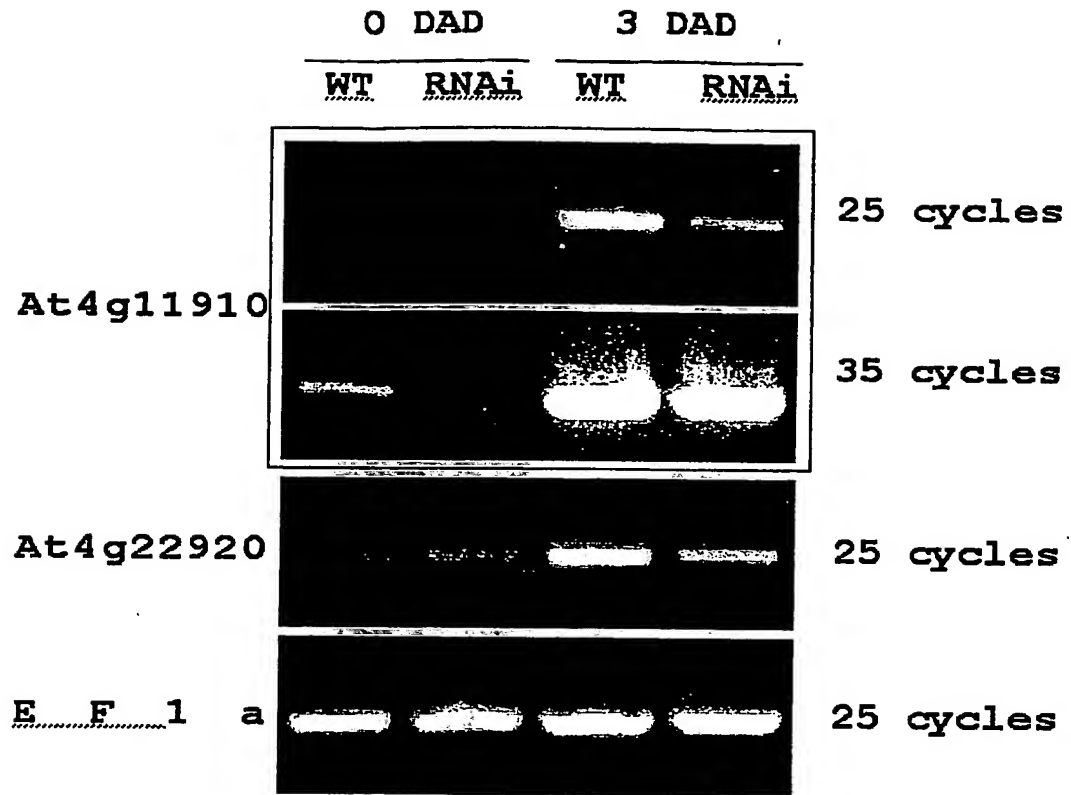
7 DAD

T1-1



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FIG. 26



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